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26 Jul 1948 SCIENTIFIC Number 60

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Abstracted in this issue:

Title	Issue		Date
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"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 12-14, 21-23, 67-72, 88-96	Vol LVI	No 7	Jun 1947
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 3-7, 19, 20, 26, 36-43, 75, 76, 97-101	Vol LVII	No 1	Jul 1947
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 1, 2, 18, 24, 25, 44-47, 73, 77-79, 84, 85, 102-105	Vol LVII	No 2	Jul 1947
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 8-11, 15-17, 27-35, 48-66, 74, 80-83, 86, 87, 106-113	Vol LVIII	No 7	Dec 1947

NOTE

In indexing these abstracts the following guides are used: MEDICINE - "Quarterly Cumulative Index Medicus," American Medical Association; CHEMISTRY - "Chemical Abstracts Subject Index," American Chemical Society; GENERAL - "Subject Headings for Technical Libraries," US Department of Commerce, Office of Technical Services.

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USSR/Chemistry - Phosphoric Acids, Esters Jul 1947
Chemistry - Synthesis

"Synthesis of the Esters of Tin Trialkyl-Phosphone," B. A. Arbuzov, Corr Mem, Acad Sci; A. N. Pudovik, Chem Inst, Kazan Br, Acad Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Reaction for formation of esters of alkylphosphonic acids in metallo-organic unions, containing haloids. Presents some basic facts concerning chemical reactions. Describes tests which produced subject esters as a result of tin trialkyl-haloid and trialkylphosphite relationship. Submitted, 14 May 1947.

FDB 60T1

USSR/Chemistry - Synthesis Jul 1947
Chemistry - Organic Compounds

"Synthesis and Properties of Tetrabenzylbutandiol and Some of Its Derivatives," A. D. Petrov, Corr Mem, Acad Sci; P. S. Batayev, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Lists several series of radicals on basis of their positive charges obtained by authors in experiments conducted to determine effects of synthesis and properties of tetrabenzylbutandiol. Submitted, 10 May 1947.

FDB 60T2

USSR/Chemistry - Dyes, Cobalt Blue Jul 1947
Chemistry - Dyes, Chrome Rose

"The Derivation of Cobalt Blue and Chrome Rose Mineral Dyes of the Spinel Type," S. G. Tumanov, Chem-Tech Inst imeni D. I. Mendeleyev, Moscow

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Describes series of experiments in which blue cobalt and rose chrome pigments were obtained and new pigments found in a predominant number of cases to be of spinel type. Submitted by Academician D. S. Belyankin, 9 Jan 1947.

FDB 60T3

USSR/Chemistry - Hydrofluoric Acid Jul 1947
Chemistry - Organic Compounds

"Interaction of Aliphatic Oxides and Hydrogen Fluoride," I. L. Knunyants, Corr Mem Acad Sci; O. V. Kil'disheva, E. G. Bikhovskaya, Inst Org Chem, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Describes new reaction in separation of aliphatic oxides by hydrogen fluoride which produced glycol fluorhydrin and discusses spontaneous change of atoms of chlorine into fluoride.

FDB 60T4

USSR/Chemistry - Oxalic Acid Jul 1947
Chemistry - Reduction, Electrolytic

"A Study of the Cathodic Process During Electro-Reduction of Oxalic Acid," N. A. Izgaryshev, Corr Mem Acad Sci; I. I. Aryamova, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Describes experiment to clarify mechanism of one of cathode processes in which primary object was to establish connection between process of electrosynthesis and form of polarization curves.

FDB 60T5

USSR/Chemistry - Platinum Jul 1947
Chemistry - Organic Compounds

"Alkyl Compounds of Platinum," A. Gel'man, Ye. Gorushkina, Inst Gen Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Describes experiments which enabled authors to obtain complex metalorganic compounds of platinum with pyridine and ethylene diamine of type $[(CH_3)_2 PtJP_{y2}]$ and $[(CH_3)_3 PtJEn_2]$.

FDB 60T6

USSR/Chemistry - Peptides Jul 1947
Chemistry - Synthesis

"Enzyme Synthesis of Polypeptides Under Pressure," S. Ye. Bresler, M. V. Glikina, Phys-Tech Inst, Acad Sci USSR, Leningrad, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Describes experiments which show that proteolytic ferments such as trypsin, pepsin, erepsin, and papain resynthesize under a pressure of several thousand atmospheres. Expresses thanks to N. A. Seleznevaya who took part in the experiments.

FDB 60T7

USSR/Chemistry - Glycol Dec 1947
Chemistry - Synthesis

"Synthesis and Dehydration of Some High Molecular Glycols," M. A. Chel'tsova, Corr Mem, Acad Sci USSR; A. D. Petrov, Inst Org Chem, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Tests were made on obtaining higher diolefins of an isostructure with a composition of C_{30} and C_{43} by dehydration over oxalic acid of corresponding glycols. In dehydration of high molecular glycols, a mixture of hydrocarbons with oxygen containing

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USSR/Chemistry - Diffusion Dec 1947
Chemistry - Solutions, Kinetics and Diffusion

"New Method of Measuring Free Diffusion in Solutions," P. V. Afanas'yev, Inst Biochem imeni A. N. Bakh, Acad Sci USSR, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Describes experimental development of Viner's equations in a system of coordinates: dn/dx,n. The dn/dx relationship was obtained as a result of the Tepler-Schlieren effect. Utilized an optical method of observations. Submitted by Academician A. I. Oparin, 4 Jul 1947.

FDB 60T9

USSR/Chemistry - Glycol (Contd) Dec 1947

compounds which do not contain hydroxide groups was obtained. Attempted to obtain hexanes with a composition of C_{14} and C_{18} by dehydration of tetraallyl-ethanediol and tetraallyl-hexanediol. Only dehydration of the second over $CuSO_4$ was successful.

FDB 60T8

USSR/Chemistry - Ions Dec 1947
Chemistry - Cations

"Thermochemical Radii of Ions in Solution," K. B. Yatsimirskiy, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Uses method of calculating radii of ions from thermochemical data to calculate this data for several ion solutions. Method consists of finding magnitude of energy of a lattice from thermochemical and spectroscopic data, according to the equation

$$U = -\Delta H_K - \Delta H_X - \Delta H_{KX},$$

where U is the energy of the lattice,

$-\Delta H_K$, $-\Delta H_X$ and $-\Delta H_{KX}$

FDB 60T10

USSR/Chemistry - Heterocyclic Compounds Dec 1947
Chemistry - Isomerism

"Tautomerism of Derivatives of Heterocyclics," M. Ye. Dyaktina, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Loss of energy of resonance in tautomerization of derivatives of heterocycles is greater than change of energy of resonance in tautomerization of derivatives of hydrocarbons. Therefore, noticeable inclination toward tautomerization will be observed only in oxide derivatives because of the great gain in energy of bond. Submitted by Academician A. N. Frumkin, 16 Jun 1947.

FDB 60T11

USSR/Chemistry - Ions (Contd) Dec 1947

and $-\Delta H_{KX}$ are the heat of formation of a gaseous cation, a gaseous anion, and hard salt. Submitted by Academician I. I. Chernyayev, 18 Jun 1947.

FDB 60T10

USSR/Chemistry - Rubber, Vulcanizing Jun 1947
Chemistry - Rubber, Reclaiming

"Destructive Dissolving of Vulcanized Rubber," B. Dogadkin, Z. Tarasova, A. Pasynskiy, Moscow Inst Fine Chem Tech, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Asserts that vulcanization should be considered process in which main feature is formation of spatial structure from molecular chains, connected in operation of vulcanizing agent by forces of main valences. Describes process of destructive dissolving of rubber, undoubtedly of great importance in

FDB 60T12

USSR/Chemistry - Alkali Metal Fluorides Jun 1947
Chemistry - Systems

"Melting Point Diagrams of Ternary Systems of Lithium, Sodium, Potassium, and Rubidium Fluorides," Ye. P. Dergunov, Lab of Molten Salts, Inst Gen Inorg Chem imeni Kurnakov, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Study of diagrams of fusibility of ternary systems of these fluorides is of theoretical interest because a number of important equilibria, characterized by formation of solid solutions and eutectic alloys with very great decrease in melting point, can be reduced

FDB 60T13

USSR/Chemistry - Rubber, Vulcanizing (Contd) Jun 1947

technical processes of refurbishing rubber by dissolving method. Illustrated with graphs.

FDB 60T12

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USSR/Chemistry - Alkali Metal Fluorides (Contd) Jun 1947

to this system. Studied surface crystallization of system. Submitted by Academician I. I. Chernyayev, 26 Apr 1947.

FDB 60T13

USSR/Electricity Jun 1947
Electrolysis
Electrodes, Potential

"Thermodynamic Electrode Potentials," Ye. N. Gapon

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Gives long table of data on electrodes of various elements, and discusses briefly calculation of thermodynamic electrode potentials from data which are not electrochemical.

FDB 60T14

USSR/Electricity Dec 1947
Electrolysis
Electrodes - Polarized

"Multielectrode Partially Polarized Systems. Systems of Electrodes Connected as a 'Star'," I. A. Levin, Corr Mem, Acad Sci; G. V. Akimov, G. B. Klark, Lab of Corrosion of Alloys, Inst Phys Chem, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

From earlier work, it is possible to solve problems referring to multielectrode systems, which are almost completely polarized, in which ohmic resistance can be

FDB 60T15

USSR/Electricity (Contd) Dec 1947

disregarded, or where it is necessary to consider only ohmic resistance and polarization can be disregarded. The more general case, which demands calculation of both the polarization and ohmic resistance, has not been solved. Present work gives solution of problem for a system of electrodes connected in a star form.

FDB 60T15

USSR/Electricity Dec 1947
Cathodes, Mercury
Voltage - Measurements

"Dependence of the Measurement of Hydrogen Overvoltage on a Mercury Cathode Upon the Composition of the Solution," V. S. Bagotskiy, Moscow State U imeni M. V. Lomonosov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Determination of exact dependence of speed of reaction of cathode secretion of hydrogen upon concentration of hydrogen ions in solution has great value to explain mechanism of this reaction. Meas-

FDB 60T16

USSR/Electricity (Contd) Dec 1947

urements presented quantitatively confirm theory expressed by Frumkin regarding dependence of hydrogen overvoltage upon concentration of hydrogen ions in solution and upon degree of diffusability of binary layer on surface of electrode. Submitted by Academician A. N. Frumkin, 2 Jul 1947.

FDB 60T16

USSR/Engineering Dec 1947
Ships - Vibration
Mathematics, Applied

"The Calculation of the Profile of Waves Arising in the Motion of a Ship," N. N. Kabachinskiy, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

First step is utilization of the law of superimposing upon each other waves which are caused by separate elements of a ship. To simplify calculation of profile, a table of functions of influences depending upon coordinates is compiled. Submitted by Academician V. L. Pozdyunin, 20 Jun 1947.

FDB 60T17

USSR/Engineering Jul 1947
Screws
Cavitation

"Quality of Supercavitating Screws," V. L. Pozdyunin, Academician, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Tests on various experimental models of supercavitating screws conducted during past year at Cavitation Laboratory of Science Research Institute imeni Academician A. N. Krylov, showed that efficiency of supercavitating screws under ordinary conditions of load approached that of ordinary screws. Submitted, 10 May 1947.

FDB 50T18

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USSR/Engineering Jul 1947
Motors, Synchro
Mathematics, Applied

"Fluctuations of Synchronous Motors," I. S. Bruk, Carr Mem, Acad Sci USSR, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Shows that with small allowances for characteristics of turning moment of synchronous motor, it is possible to obtain a simple analytical solution which will satisfy a series of more complex cases.

FDB 60T19

USSR/Geology Jul 1947
Petrology

"The Dynamic Peculiarities of Alluvial Deposits," V. V. Lamakin, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Gives details of study made by author on dynamic phases of alluvial deposits and includes diagram of longitudinal profile of a river valley showing various alluvial conditions. Submitted by Academician V. A. Obruchev, 25 Jan 1947.

FDB 60T20

USSR/Geology Jun 1947
Sediment

"The Chemical Characteristics of the Ural Sapropels," E. M. Titov, Ural Lumber Ind Inst, Sverdlovsk, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Tabular data and brief discussion concluding that conditions arose in Urals both for abiogenic depositions of carbonic acid lime and for biogenous ones, particularly with assimilation processes, especially with characeae and blue-green algae, remains of which are very well represented in calcareous sapropels of Urals, probably as a result of bacterial activity.

FDB 60T21

USSR/Geology Jun 1947
Petrology

"New Data on the Malka Serpentinite Massif and the Iron Ores of Its Eroded Surface," N. D. Sobolev, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Gives newly established data on petrography of Malka in North Caucasus, as follows: 1) in central part of massif on northern and eastern borders, beneath mesozoic deposits, there are only olivine and rhombic pyroxene (39 forms); 2) found xenolite masses in serpentinite massif of surrounding lower-paleozoic clay shales several tens of meters long and several meters wide.

FDB 60T22

USSR/Geology Jun 1947
Tectonics

"The Tectonic Structure of the Northwest USSR," F. A. Alekseyev, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Discusses area in seven subdivisions: 1) Baltic ledge; 2) Belorussian-Lithuanian subterranean ledge; 3) Latvian "anticline"; 4) East-Prussian-Lithuanian depression; 5) Il'men depression; 6) Valday terrace; 7) Northwest wing of Moscow syneclisis.

FDB 60T23

USSR/Geology Jul 1947
Stratification

"New Data on the Stratigraphy of the Taymyr Depression Quarternary Deposits," V. N. Saks, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Data collected by the author during 1939-1942, and also during 1946 GlavSevMorPut (Main Northern Sea Route) Expedition to shores and regions around port of Ust'-Yeniseysk. Surveys also made of beach areas of Yenisey and Yeniseysk Gulf. Ice dug up found to be of snow origin and dated not later than Vyurmsk (Valdayskiy) ice age. Submitted by Academician V. A. Obruchev, 25 Jan 1947.

FDB 60T24

USSR/Geology Jul 1947
Petrology

"New Data on the Devonian Deposits of the Southeastern Part of the Russian Platform," K. R. Chepikov, V. N. Krestovnikov, A. G. Kuznetsov, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Results of studies conducted on core samplings at BuguruslanNeft Trust, taken by Volga-Bashkir Expedition of Academy of Sciences, USSR. Reports that devonian deposits in Buguruslan region vary greatly from devonian deposits in other regions. Submitted by Academician D. S. Belyankin, 29 Jan 1947.

FDB 60T25

USSR/Geology Jul 1947
Petrology

"Petrology and Metallogenesis of Alkaline Granites in the Kola Peninsula," A. A. Chumakov, Kola Base, Acad Sci USSR, Kirovsk, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Describes petrological research carried out in 1946 by Kola Base of Academy of Sciences, USSR on Kiev alkaline granites, which established nature of granites and their role and place in geological history. Submitted by Academician D. S. Belyankin, 26 Dec 1946.

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USSR/Geology Dec 1947
Maps
Crystals

"New Data Concerning the Problem of the Boundaries and Geology of the Southeastern Part of the Anabar Crystal Massif," M. F. Belyakov, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Geologic maps of the USSR, 1937 and 1940 (RF 1:2,500-000), located Anabar crystal massif. All-Union Arctic Institute in 1946 sent an expedition to define more clearly southern and southeastern boundaries. While surveying boundaries, expedition recorded new geological data. Submitted by Academician V. A. Obruchev, 17 Jul 1947.

FDB 60T27

USSR/Geological Prospecting Dec 1947
Ore Deposits

"Some Particulars of Metal Genesis in Western Uzbekistan," Kh. M. Abdullayev, Geol Inst, Acad Sci, Uzbek SSR, Tashkent, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Shows boundaries of given area, general topography of region, and brief description of geology. Reveals interest in genesis of metals as this appears to be a new rare metal ore province in Central Asia. Submitted by Academician I. F. Grigor'yev, 18 Jul 1947.

FDB 60T28

USSR/Geology Dec 1947
Petrology
Minerals

"Petrographic Correlation and Mineralogical Association of the Upper Permian and Mesocenozoic Deposits of the Southern Emba Petroleum Bearing Regions," N. A. Shvemberger, Cent Sci Res Lab, 'KazakhstanNeft', 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Data obtained as result of mechanical and mineralogical analysis at Central Scientific and Research Laboratory from 1937 to 1946, permitted establishment of petrographic correlation systems for subject deposits. Data

FDB 60T29

USSR/Geology
Copper

"Genesis of Crystallic Slates of the Buropskiy Deposits, Central Caucasia," V. F. Morkovkina, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Data permitting a new approach to solution of problem of genesis and development of Buronskiy copper pyrite deposits collected by 1938-1940 Caucasia Expedition of Academy of Sciences of USSR. Submitted by Academician D. S. Belyankin, 16 Jul 1947.

FDB 60T30

USSR/Geology (Contd) Dec 1947

presented in tabular form. Submitted by Academician I. I. Shmal'gauzen, 10 Jul 1947.

FDB 60T29

USSR/Geology Dec 1947
Stratification

"Systematic Breakdown of the Cenozoic Continental Deposits of Southern Fergana," V. Ye. Grib, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Brief characteristics of various layers which author believes make up cenozoic deposits of Fergana and other similar regions. Presents data in table form. Compares deductions with deductions obtained by O. S. Vyalov (1936), and N. P. Vasil'kovskiy (1935). Submitted by Academician V. A. Obruchev, 14 Jul 1947.

FDB 60T31

USSR/Geology Dec 1947
Stratification

"New Data on the Stratification of the Deposits of Central Caucasia (Fiag-Don River)," A. P. Lebedev, Inst Geol Sci, Acad Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Presents new paleontological data obtained during surveys of slopes of Fiag-Don River basin in search of polymetallic ore deposits. Submitted by Academician D. S. Belyankin, 9 Jul 1947.

FDB 60T32

USSR/Geology Dec 1947
Volcanos

"The Roots of Mud Volcanos of the Transcaspian Regions," G. Ya. Krymgol'ts, G. V. Shvedov, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Transcaspian mud volcanos are divided into three tectonic zones: 1) Pre-Balkhansk depression; 2) region of shallow lying rocks of the upper geologic strata; and 3) pre-Elbrus fault. Brief description of each of these regions. Submitted by Academician D. V. Nalivkin, 15 Jul 1947.

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USSR/Geology Dec 1947
Volcanos

"Fundamentals of the Development of Volcanos in Gruziya, From the Paleozoic to the Miocene Ages," G. S. Dzotsenidze, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Most active volcanos in Gruziya observed between Paleozoic and Quarternary periods. Presents brief description of tectonic structure of Gruziya since development of volcanos depends on age during which volcano was formed and geotectonic structure of regions around volcano. Submitted by Academician D. S. Belyankin, 29 Jul 1947.

FDB 60T34

USSR/Mathematics - Calculators Dec 1947

"Study of Accidental Coincidences for Measuring High Intensity With Counters," M. I. Podgoretskiy, V. A. Khvoles, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

In cases where too many numbers are registered, system becomes overloaded with result that only each n-th impulse effects output. Principle discussed assumes that calculating machine is free from this fault; therefore it is possible to obtain any coefficient of translation, without difficulty, in apparatus. Submitted by Academician S. I. Vavilov, 24 Jun 1947.

FDB 60T35

USSR/Mathematics - Series Jul 1947
Mathematics - Integrals

"On the Integration of Series of Functions," Ya. A. Tagamlitskiy, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

It is demonstrated that, in order that a function $f(P)$ be summable and the following series--integral of $f_1(P)dP$, integral of $f_2(P)dP$, etc., converges to integral of $f(P)dP$ for every interval, for every partial series selected from $f_1(P)$, $f_2(P)$, etc., one may find a non-negative summable function $F(P)$ such that the inequality $|F_K(P)| \leq F(P)$ will be true

FDB 60T36

USSR/Mathematics - Series, Fourier Jul 1947
Mathematics - Functions, Trigonometric

"On the Summation of the Series of Fourier Functions of Finite Variation," I. P. Natanson, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Shows following: Given that $K_n(t)$ is a continuous trigonometrically-periodic function with continuous derivative $K_n'(t)$ such that, for $0 < a \leq pi$ and $0 < b \leq pi$, integral of $K_n(t)dt$, between -a and b, equals 1 (as n approaches infinity). For any summable function $f(t)$ we write: $f_n(n)$ equals the integral of $f(t) \cdot K_n(t-x)dt$ (between -pi and

FDB 60T37

USSR/Mathematics - Series (Contd) Jul 1947

for an infinite number of the sign K. Submitted by Academician Kolmogorovіy.

FDB 60T36

USSR/Mathematics - Series, Fourier (Contd) Jul 1947

pi). It is proved that if the integral of $|K_n(t)|dt$ is less than M (between -pi and pi; n = 1, 2, ...) then for an absolutely continuous and 2 pi- periodic function there will be the following: Var (between -pi and pi) $[f_n(x)-f(x)]$ equals zero as n approaches infinity. Submitted by Academician Smirnoviy.

FDB 60T37

USSR/Mathematics - Topology Jul 1947
Mathematics - Equations, Linear

"On the Solvability of Linear Equations in a Hilbert Space," S. G. Mikhlin, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Proves following theorem: Let A be a closed linear operator, fixed in a certain linear manifold D_A, dense in a Hilbertian space H. Further, let there be a linear operator finite in H such that $MAf = f + tf$, where tf is a completely continuous operator. Then for solution of equation $Af = F$ it is sufficient that F be orthogonal to any solution of conjugate homogeneous equation $A^*p = 0$. Submitted by Academician Smirnoviy.

FDB 60T38.

USSR/Mathematics - Approximation Jul 1947

"On the Optimum Approximation by Means of Functions Not the Generatrices of the System of Chebyshev," Ya. L. Geronimus, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Gives three theorems on subject approximation. Submitted by Academician Bernshteyn.

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USSR/Mathematics - Approximation Jul 1947

"On the Final Relations Among the Constants of the Theorem of Optimum Approximation," Academician Bernshteyn, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

A refinement is given ordinary remainder theorem: $|f^{(k)}(x+h) - f^{(k)}(x)| \leq Mh^{a}$ (where $0 < a \leq$).

FDB 60T40

USSR/Medicine - Birds Jul 1947
Medicine - Epithelium

"The Pharmaceutical and Definitive Differentiation of Resorbing Entodermal Epithelia in Birds," A. G. Knorre, Inst Experimental Med, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Gives details of experimental work on various stages of differentiation of intestinal and yolk epithelia before, during and after incubation. Submitted by Academician I. I. Shmal'gauzen, 26 Jan 1947.

FDB 60T41

USSR/Medicine - Organs Jul 1947
Medicine - Regeneration

"Regeneration of an Organ After the Inversion of Its Polarity," T. B. Korobova, Second Med Inst Moscow, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Presents experimental work carried out to verify previous research on heteropolar regeneration and to pursue more accurate study of structure of regenerates. Submitted by Academician I. I. Shmal'gauzen, 26 Jan 1947.

FDB 60T42

USSR/Medicine - Silkworms Jul 1947
Medicine - Food

"The Value of Age Changes of Oak Leaves in the Feeding of Caterpillars Antheraea Pernyi Guer (Insecta Attaciae)," I. V. Kozhanchikov, Zool Inst, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Experimental work carried out with oak silkworm (Antheraea pernyi Guer) and study made of growth of caterpillars in six series of experiments by feeding them with oak leaves (Quercus robus L.). Submitted by Academician L. A. Orbeli, 28 Nov 1946.

FDB 60T43

USSR/Medicine - Chlorophyll Jul 1947
Medicine - Amino Acids - Determination

"The Nature of the Bond Between Chlorophyll and Protein in Chloroplasts," T. N. Godnev, Lab Plant Physiol, Acad Sci USSR; O. P. Osipova, Inst Plant Physiol imeni K. A. Timiryazev, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Lists experiments of various scientists to determine nature and character of subject bond. Describes experiments showing effect of amino acids, palmitinic acids, and ethyl bromides on chlorophyll. Submitted, 22 Jan 1947.

FDB 60T44

USSR/Medicine - Plants - Development Jul 1947
Medicine - Light, Effects

"Luminescent Tubes as Sources of Radiation for Light Culture of Plants," N. A. Maksimov, Academician; A. F. Kleshnin, Inst Plant Physiol imeni K. A. Timiryazev, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Tests conducted to determine more exactly effects of artificial light on plant growth, using various types of bulbs. Determined fluorescent lamps to be more economical than filament lamps, and that they brought about better development of plant. Many plants develop under fluorescent lamps in same

FDB 60T45

USSR/Medicine - Flies Jul 1947
Medicine - Heredity, Mechanism

"The Effect of the Development of the Drosophila Melanogaster Larvae on the Occurrence of Eyeless Forms in Their Offspring," D. M. Shifrin, Inst Evolutionary Morph imeni A. N. Severtsov, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Studied effects of development of parent on mutation of eyeless offspring. Experiments conducted on strongly inbred eyeless Drosophila. It was determined that development of larvae produces a regular almost unnoticeable change in female sex cells. Submitted by Academician I. I. Shmal'gauzen, 1 Feb 1947.

FDB 60T46

USSR/Medicine - Plants - Development (Contd) Jul 1947

manner as in short-day regions. Submitted, 13 May 1947.

FDB 60T45

Approved For Release 1999/08/25 : CIA-RDP78-03107A002000010020-7

Approved For Release 1999/08/25 : CIA-RDP78-03107A002000010020-7

USSR/Medicine - Growth, Plants Jul 1947
Medicine - Growth - Experimental Studies

"New Quantitative Method for Determining the Activity of Growth Substances," A. N. Boyarkin, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Determination not based solely on sensitivity of coleoptile. Describes process of test: development of coleoptile, its preparation; setting of coleoptile in an active solution; measurement, and determination of activity. Experiments conducted at Laboratory of Growth and Water Regime of Institute of Plant Physiology imeni N. A. Timiryazev, Academy of Sciences, USSR. Submitted by Academician N. A. Maksimov, 19 Feb 1947.

FDB 60T47

USSR/Medicine - Amino Acids - Determination Dec 1947
Medicine - Cells

"Some Experimental Data on the Basis of the New Theory of the Determination of Amino Acids in Animal and Plant Cells," A. N. Parshin, Inst Experimental Med, Acad Med Sci USSR, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Principle intent of experiments, to clarify role of histidine in animal and plant cell. Brief account of experiments and results obtained. Submitted by Academician K. M. Bykov, 25 Jun 1947. Same paper also published in above journal Vol LVIII, No 4, 1947, p 621.

FDB 60T48

USSR/Medicine - Albumin Dec 1947
Medicine - Eggs - Properties

"Changes of the Reactivity of the Hydrosulphide Group and the Pentide Bond in Crystallic Egg Albumin During Denaturization," K. I. Strachitskiy, Lab Cellular Albumin, Inst Biol and Med Chem, Acad Med Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Studies show that gradual increase of divisibility of vegetable pepsin, which corresponds to pentide bond of egg albumin in process of its denaturization, corresponds to growth of SH-group which it contains. Submitted by Academician Ya. O. Parnas, 8 Jun 1947.

FDB 60T49

USSR/Medicine - Plants, Diseases Dec 1947
Medicine - Moths

"New Type of Leaf-Roller Moth, Harmful to the Pear in European USSR," A. S. Danilevskiy, Lab Entom, Leningrad State U, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Describes serious 1946 epidemic of pear damage in southern part of Kursk. Author attributed this disease to members of Carpocapsa Tr. Describes various stages in metamorphosis of this moth and briefly traces its cycle of propagation. Submitted by Academician Ye. N. Pavlovskiy, 2 Jun 1947.

FDB 60T50

USSR/Medicine - Eyes, Accomodation Dec 1947
Medicine - Potassium, Effects

"Changes of the Spectral Sensitivity of the Eyeball Due to the Influence of Potassium Ions," S. V. Kravkov, Corr Mem, Acad Sci USSR, Dept of Physiol Optics, Cent Ophthalmological Inst imeni Gel'mgol'ts, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Describes tests made to determine effect of potassium ions on sensitivity of iris of eye to monochromatic light rays in range of 425 to 700 mμ. Submitted, 11 Oct 1947.

FDB 60T51

USSR/Medicine - Flies Dec 1947
Medicine - Heredity Mechanism

"Time of Development of Curl Indications in the Drosophila Melanogaster," S. I. Alikhanyan, F. M. Polkanov, Moscow State U imeni M. V. Lomonosov, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Dominant mutation of curl in Drosophila Melanogaster was first observed in 1918. This type of Drosophila has very severely curled wings. Observed that curl indications depend on temperature at which flies were born. Low temperatures produced various results: in some cases curling intensified; in others, diminished. Submitted by Academician I. I. Shmal'gauzen, 26 May 1947.

FDB 60T52

USSR/Medicine - Flies Dec 1947
Medicine - Heredity, Experimental

"Mutation in Drosophila Through the Action of Dichloridethylsulphide," S. M. Gershenzon, R. A. Zil'berman, O. L. Levochkina, A. M. Pashkovskiy, P. O. Sit'ko, N. D. Tarnavskiy, Genetics Sec, Inst Zool, Acad Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Chemical stimulation of mutation was begun before war. In postwar period yperite included in experiments. Observed that this substance had high mutation genesis quality which acts directly on chromosomes but does

FDB 60T53

USSR/Medicine - Flies Dec 1947
Medicine - Heredity Mechanism

"Genetic Bases of Adaptive Polymerization and Its Significance in Evolution," N. P. Dubinin, Corr Mem, Acad Sci USSR, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Studies on genetics of polymerization established fact that it is based on a complex heterogenous heredity, which has broad effect and important significance since it includes all Drosophila population. Submitted, 4 Oct 1947.

FDB 60T54

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USSR/Medicine - Flies (Contd) Dec 1947

not cause any biological changes in cytoplasm. Submitted by Academician A. V. Palladin, 27 Jun 1947.

FDB 60T53

USSR/Medicine - Wheat Dec 1947
Medicine - Heredity in Plants

"Mutation of Winter Wheat," I. F. Lyashchenko, Azov-Don Biol Sta, Rostov-on-Don State U imeni V. M. Molotov, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Describes tests conducted on winter wheat selected by Kirgiz Selection station, attempting to determine original parentage of pure strains which made up hybrid winter wheat. Great importance attached to small as well as large physiological mutations. Submitted by Academician I. I. Shmal'gauzen, 13 Jun 1947.

FDB 60T55

USSR/Medicine - Plants - Physiology Dec 1947
Medicine - Moisture, Determination

"Some Data on Experimental Studies of Internal Control of Desiccation in Woody Plants," Ye. A. Pomanova, Lumber Tech Acad imeni S. M. Kirov, Leningrad, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Results of experiments conducted for two years with biotypes of Salix viminalis s.l. Observations made on development of these biotypes (two used: one from Ob River area, and other from Il'men Lake region). Describes work done preparatory to studying interbiotypic control against desiccation. Submitted by Academician V. N. Sukachev, 23 Jul 1947.

FDB 60T56

USSR/Medicine - Fish Dec 1947
Medicine - Water - Examination

"Influence of Rapacious Fish in the Diverted Propagation of the Baykal Cottoidei," D. N. Taliyev, Baykal Limnological Sta, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Cottoidei are an important component of feed of several Baykal fish. At present, 22 forms of Cottoidei or 70% are known to science. Asserts that majority of Cottoidei found in Lake Baykal were brought in only after ice ages. Submitted by Academician I. I. Shmal'gauzen, 10 Jun 1947.

FDB 60T57

USSR/Medicine - Rubber Dec 1947
Medicine - Regeneration

"Decapitation as a Factor for Changing the Nature of the Kok- and Krym-Sagyz," G. Kh. Molotkovskiy, Chernovitskiy State U, Chernovits, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Describes studies made on 2-year-old plants which decapitated after 2 years. Describes anatomic investigations of regenerators of kok- and krym-sagyz. Accumulation of couchouc kok-sagyz regenerants. Submitted by Academician N. A. Maksimov, 8 Jul 1947.

FDB 60T58

USSR/Medicine - Plants Dec 1947
Medicine - Osmosis and Permeability

"Influence of the Elements N, P, and K in the Formation of Roots as Organs of Absorption," I. I. Kolosov. Inst Plant Physiol imeni K. A. Timiryazev, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Gives method for determining transfer of live roots, absorption and adsorption by their surfaces, average length and diameter, permitting study of effects of N, P, and K in formation of roots as an organ of absorption. Submitted by Academician N. A. Maksimov, 5 Jul 1947.

FDB 60T59

USSR/Medicine - Carbon Compounds Dec 1947
Medicine - Blood and Brain

"Carbon Anhydrase in the Blood and Brain in the Embryogenesis of White Rabbits and Guinea Pigs," Z. D. Pigareva, Inst Evolutionary Physiol and Pathol of Higher Nervous Activity imeni I. P. Pavlov, Koltushakh, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Comparative physiological studies of development of carbon anhydrase conducted at Kreps'laboratory. Tests to determine changes in activity of this ferment in blood and brains of fetus of subject test animals. Submitted by Academician L. A. Orbeli, 6 Jun 1947.

FDB 60T60

USSR/Medicine - Worms Dec 1947
Medicine - Cells - Transplantation

"Return of Polarity During Transplantations in the Lumbriculus Variegatus," S. M. Rozanov, deceased, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Experiments conducted at Embryological Laboratory, Leningrad State University, showed that every piece of flesh cut from body of worm had its own polarity, which is maintained even during regeneration. A relatively long period of time, depending on various circumstances, necessary to destroy this polarity. Submitted by Academician I. I. Shmal'gauzen, 24 Jun 1947.

FDB 60T61

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USSR/Medicine - Marine Organisms Dec 1947
Medicine - Taxonomy

"Atlantic Elements in the Black Sea Polyhet Fauna," K. A. Vinogradov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Twenty new polyhets discovered in Black Sea. Describes facts which lead scientists to conclude that some of these are also common to Atlantic fauna. Submitted by Academician I. I. Shmal'gauzen, 23 May 1947.

FDB 60T62

USSR/Medicine - Taxonomy Dec 1947
Medicine - Crayfish

"New Type of Epischura From the Amur River Basin (Epischura Udylensis Sp.N., Copepoda--Calanoida)," Ye. V. Borutskiy, Zool Museum, Moscow State U imeni M. V. Lomonosov, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Describes newly discovered crayfish of order Epischura found by Amur Ichthyological Expedition of Academy of Sciences, USSR. Submitted by Academician I. I. Shmal'gauzen, 11 Jul 1947.

FDB 60T63

USSR/Medicine - Hemosporidia Dec 1947
Medicine - Animals, Diseases

"Wild Mammalia as Test Animals for Studying Hemosporidia in Domestic Animals," D. N. Zasukhin, Inst Malaria, Med Parasitol and Helminthology, Acad Med Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Hemosporidia in domestic animals is widespread in southern part of USSR, and causes harm to population. Describes experiments conducted to study course of disease. Test animals were wild animals found in various regions, such as Kazakhstan. Submitted by Academician K. I. Skryabin, 17 Jun 1947.

FDB 60T64

USSR/Medicine - Fleas Dec 1947
Medicine - Taxonomy

"Geographic Propagation and Migration Routes of Fleas of the Genus Pariodontis in Connection With the History of Their Hosts (Wild Animals)," V. B. Dubinin, Parasitol Sec, Zool Inst, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Reveals points of similarity between fleas of genus Pariodontis and those classified as wild fleas. Pariodontis is divided into five poorly defined species. Variations are most noticeable in differences in cephalic structure. Submitted by Academician Ye. N. Pavlovskiy, Jun 1947.

FDB 60T65

USSR/Medicine - Filaria Dec 1947
Medicine - Helminthology

"Encysted Filaria in Human Bodies and Their Systematic Disposition," K. I. Skryabin, Academician, Helminthological Lab, Acad Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Summarizes case histories of 19 patients whom author treated in 1940. All had encysted forms of filaria which proves that human body is not favorable ground for free filaria to exist. Submitted, 9 Oct 1947.

FDB 60T66

USSR/Medicine - Wheat Jun 1947
Medicine - Plants - Hybridity

"Cytological Investigation of the First Generation of the Wheat-Elimus Hybrid," F. Kh. Bakhteyev, I. A. Palamarchuk, Inst Grain Econ of Nonblack Earth, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Concludes that great vegetative development of hybrid plants and rich development of flowers, in period before blossoming begins, suggests possibility of treatment by colchitsine to overcome their sterility. Illustrated with drawings.

FDB 60T67

USSR/Medicine - Plants - Experimental Jun 1947
Medicine - Tomatoes

"Development of Plants From Preventive and Adventive Buds, Which Had Been Separated From the Mother Plant," A. K. Yefeykin, Chuvash Agr Inst, Cheboksary, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Describes tests conducted with tomato plant to determine degree and possibility of development of preventive and adventive buds which had been removed from a mother plant. Submitted by Academician A. A. Rikhter, 3 Jan 1947.

FDB 60T68

USSR/Medicine - Fish Jun 1947
Medicine - Taxonomy

"The Order Hemiculter (Pisces, Cyprinidae) in the Amur Basin," G. V. Nikol'skiy, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Material collected by Amur Expedition of Moscow State University. Briefly describes characteristics of Hemiculter located in Amur River basin. Submitted by Academician L. S. Berg, 26 Dec 1946.

FDB 60T69

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USSR/Medicine - Fungi, Poisonous Jun 1947
Medicine - Poisons and Poisoning - Effects

"A New Toxic Fungus Dendrodochium Toxicum (Pidoplischka N. et Bilai W. sp. nov.)," M. M. Pidoplichka, V. I. Bilay, Inst Microbiol, Acad Sci USSR, Kiev, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Describes effects and some of characteristics of a new poisonous fungus (mushroom) discovered in 1937 in the southern Ukraine. Discovered through poisoning of horses; caused rapid death without any warning symptoms. Submitted by Academician B. L. Isachenko, 28 Dec 1946.

FDB 60T70

USSR/Metals Jun 1947
Crystallography
Deformation

"Regularities in the Deformation of Metallic Monocrystals and the Presence of Surface-Active Materials," P. A. Rebinder, Academician; V. I. Likhtman, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Concludes that effects of action of an adsorbent substance - reduction of limit of flow, and decrease of coefficient of hardening - show a general relationship to concentration of oleic acid. Illustrated with microphotographs and two graphs.

FDB 60T71

USSR/Metals Jun 1947
Alloys
Corrosion

"Relation Between the Phase Condition of Alloys and Their Resistance to Corrosion," Yu. A. Klyachko, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Discussion of experimental data, illustrated with three graphs, concluding that electrochemical corrosion theory is inadequate to explain chemical behavior of alloys.

FDB 60T72

USSR/Metals Jul 1947
Steel, Bessemer
Slag

"On a Remarkable Instance of a Spherical Bessemer Slag in the Chelyabinsk Steel Mill," D. S. Belyankin, Academician; V. V. Lapin, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Table shows different characteristics of two samples of molten metals smelted at same time and under same conditions. Main difference was presence of spherical bessemer slag in one case. Briefly describes causes of this phenomenon. Submitted, 14 May 1947.

FDB 60T73

USSR/Metals Dec 1947
Cerium
Rare Earths

"Complex Citric Acid Compounds of Rare Earth Elements of the Cerium Group," D. I. Ryabchikov, Ye. A. Terent'yeva, Inst Geochem and Analytic Chem imeni V. I. Vernadskiy, Acad Sci USSR, 3¼ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Describes tests and studies leading authors to conclude that due to relationship between potassium citrate and rare earth element salts of cerium group, there is a primary reaction which produces a compound which will dissolve with difficulty. Reaction forms

FDB 60T74

USSR/Metals (Contd) Dec 1947

a simple salt of this group of metals with a citric acid residue. Submitted by Academician I. I. Chernyayev, 15 May 1947.

FDB 60T74

USSR/Metals Jul 1947
Crystallography
Zinc

"New Phenomenon of the Elastic Interaction in Single Crystals of Zinc Subjected to Plastic Flow," V. I. Likhtman, P. A. Rebinder, Academician, Sec Dispersed Systems, Inst Phys Chem, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Continues previous studies on elastic qualities of monocrystals and discusses question of whether an undeformed monocrystal can be considered as an ideal plastic body.

FDB 60T75

USSR/Minerals Jul 1947
Glass
Cobalt Oxides

"Coloring of Glass by Cobalt Compounds," A. A. Kefeli, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Gives account of experiments designed to test effect of an increase in B_2O_3 on spectral absorption of glass of various compositions. Submitted by Academician I. V. Grebenshchikov, 10 Dec 1946.

FDB 60T76

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USSR/Nuclear Physics - Isotopes Jul 1947
Activation, Chemical

"Differential Isotopic Method for Studying Activated Surfaces," N. P. Keyer; S. Z. Roginskiy, Corr Mem, Acad Sci, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Lists first results obtained from basic differential isotopic methods. Methods based on ideas published in Acta Physiochim URSS, 21,519 (1946) by S. Roginskiy, and O. Todes. Activated sugar carbon was used in tests. Molecular hydrogen and 99% pure Deutrium used as adsorbers. Submitted, 6 May 1947.

FDB 60T77

USSR/Nuclear Physics - Cosmic Rays Jul 1947
Nuclear Physics - Counters, Electronic

"Study of the Transitional Effect of Cosmic Rays in the Stratosphere With Counters," S. I. Brikker, S. N. Vernov, I. M. Yevreinova, S. P. Sokolov, T. N. Charakhch'yan, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, and Moscow State U imeni M. V. Lomonosov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Counters used to measure transitional effect at altitudes of 10-26 km. Accomplished by pibal equipment. Impulses of particles, piercing lead cover

FDB 60T78

USSR/Nuclear Physics - Cosmic Rays Jul 1947
Nuclear Physics - Ionization Chambers

"Study of the Transitional Effect of Cosmic Rays in the Stratosphere With an Ionization Chamber," S. N. Vernov, N. L. Grigorov, F. D. Savin, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, and Moscow State U imeni M. V. Lomonosov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Gives results of measurements of transitional effects of cosmic rays in stratosphere with aid of ionization chamber and calculating machine, utilizing special pibal equipment, which permitted measurements of ion-

FDB 60T79

USSR/Nuclear Physics - Cosmic Rays (Contd) Jul 1947

ization or number of particles in the 1 cm lead covering of apparatus. Submitted by Academician S. I. Vavilov, 12 May 1947.

FDB 60T79

USSR/Nuclear Physics - Cosmic Rays Jul 1947
(Contd)

of the apparatus, picked up by radio receivers on ground, then channelled through counters. Submitted by Academician S. I. Vavilov, 12 May 1947.

FDB 60T78

USSR/Nuclear Physics - Cosmic Rays Dec 1947
Nuclear Physics - Mesons

"Mass Spectra of Varitrons," A. Alikhanyan, Corr Mem, Acad Sci USSR; A. Alikhanov, Academician; V. Morozov, G. Muskhelishvili, A. Khrimyan, Phys Inst, Acad Sci, Armenian SSR, 8 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Authors reported in previous article that, as a result of magnetic analysis of composition of cosmic radiation at an altitude of 3,250 meters, new particles discovered which have a mass greater than the mass of the mesotron. Also presented data

FDB 60T80

USSR/Nuclear Physics - Particles, Elementary Dec 1947
Nuclear Physics - Stability

"Metastable Compounds of Elementary Particles," D. Ivanenko, Phys Inst, Moscow State U imeni M. V. Lomonosov; A. Sokolov, Agr Acad imeni K. A. Timiryazev, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Discusses systems whose stability is result of electric forces. Explains reliability of formation of atom type atoms from two elementary particles. Submitted by Academician S. I. Vavilov, 24 Jul 1947.

FDB 60T81

USSR/Nuclear Physics - Cosmic Rays Dec 1947
(Contd)

showing that, in cosmic radiation, there are particles with a positive and negative sign, the mass of which exceeds that of the protron. This new group of elementary particles named varitrons. Present article presents results of spectrum analysis of these new particles.

FDB 60T80

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USSR/Nuclear Physics - Uranium Dec 1947
Nuclear Physics - Xenon

"Some New Methods of Determining Absolute Geological Age of Minerals," V. G. Khlopin, Academician; E. K. Gerling, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Describes new method of determining absolute geological age of uranium minerals according to ratio of xenon, included in mineral, to the uranium. Basis of new method is process of voluntary separation of uranium which, like radioactive disintegration, must take place at a constant and unchangeable speed in thermo-

FDB 60T82

USSR/Nuclear Physics - Uranium (Contd) Dec 1947

dynamical conditions of earth's crust. In order to calculate absolute geological age in years on basis of ratio of xenon to uranium, following formula is used:

$$t = \frac{1}{\lambda_x} \; 2.30 \log_{10}\left[\frac{Xe}{A\frac{\lambda_D}{\lambda_x}N_1} + 1\right]$$

FDB 60T82

USSR/Minerals Dec 1947
Germanium
Coal

"New Confirmation of Gol'dshmidt's Observations With Respect to the Germanium Content in Rock Coal," A. B. Vistelius, All-Union Petroleum Geol and Survey Inst, Leningrad, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Brief article which supports statements made by Gol'dshmidt regarding role of germanium in coal. States that germanium is bonded in coal by means of organic components, thus creating heavy germanium

FDB 60T83

USSR/Minerals (Contd) Dec 1947

concentration in coal ashes. Submitted by Academician A. N. Kolmogorov, 27 Jun 1947.

FDB 60T83

USSR/Minerals Jul 1947
Quartz
Chlorides

"Chlorides From Some Northern Ural Quartz Veins," D. P. Serdyuchenko, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Describes finding of chlorides in quartz veins uncovered in Vangyrskiy region of Northern Urals. Table shows chemical composition of chlorides found. Submitted by Academician D. S. Belyankin, 29 Jan 1947.

FDB 60T84

USSR/Oceanology Jul 1947
Temperature - Diurnal Variations

"Calculation of the Diurnal Temperature Variation on the Surface of the Sea," A. G. Kolesnikov, Marine Hydrophys Lab, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Gives results of tests conducted to determine method of calculating diurnal temperature variation on surface of sea, using actinometric and meteorological means, to determine temperature balance of sea's surface. Submitted by Academician V. V. Shuleykin, 8 Jan 1947.

FDB 60T85

USSR/Oceanology Dec 1947
Viscosity

"Turbulent Viscosity in the Upper Layer of the Sea and Swell," S. B. Dobroklonskiy, Marine Hydrophys Lab, Acad Sci USSR, 3¼ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

In his experiments to determine coefficient of turbulent viscosity based on wave elements, Jeffreys did not arrive at any reliable conclusions; however his ideas were sound. Dobroklonskiy describes formulas for calculating turbulent viscosity, noticeable in the upper layers and waves of a sea. Submitted by Academician V. V. Shuleykin, 27 Jun 1947.

FDB 60T86

USSR/Petroleum - Prospecting Dec 1947
Sand

"Correlation of the Sandy Layers According to Their Mineral Composition," L. B. Rukhin, Leningrad State U, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Study of mineral content of sand is one of main methods petroleum industries use to determine petroleum containing capacity of sand and to compare sands which are brought up in various cores. Briefly describes method employed and some of its shortcomings. Submitted by Academician D. V. Nalivkin, 12 Jul 1947.

FDB 60T87

Approved For Release 1999/08/25 : CIA-RDP78-03107A002000010020-7

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USSR/Petroleum - Prospecting Jun 1947

"Oxidation of Gaseous Hydrocarbons by Bacteria as a Basis of Microbiologic Prospecting for Oil," E. N. Bokova, V. A. Kuznetsova, S. N. Kuznetsov, All-Union Office of Gas Survey, Moscow, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Discusses method and tabulates results proving that bacteria which oxidize hydrocarbons may consume methane and propane in concentrations of about 0.01 - 0.001%, found in natural subterranean atmosphere, etc.

FDB 60T88

USSR/Physics Jun 1947
Magnetic Fields
Magnetism

"Investigation of Kubetskiy's 'Magnetic' Tube as an Indicator of a Magnetic Field," A. G. Kalashnikov, Act Mem, Acad Pedagog Sci, N. V. Krasnogorskaya, Inst Theoretical Geophys, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Discusses relation of anode current of "magnetic" tube to intensity of "ideal" magnetic field, and relation of variation of anode current of magnetic tube from intensity of the external homogeneous magnetic field. Shows two graphs.

FDB 60T89

USSR/Physics Jun 1947
Electrons - Emission
Doppler Effect

"Emission of an Electron and an Atom Moving Along the Axis of a Channel in a Dense Medium," V. L. Ginzburg; I. M. Frank, Corr Mem, Acad Sci, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Gives mathematical discussion concluding that energy emission in case of a Doppler effect is determined by certain formulas, with factor $\int gt/2$. In this regard gives correct statement on analogous factor for the electron.

FDB 60T90

USSR/Physics Jun 1947
Wave Guides
Wave Analysis

"Method of Normal Waves as Applied to 'Flat Layered' Media," P. Ye. Krasnushkin, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Mathematical discussion of: 1) establishment of the problem and method; 2) discrete spectrum; wave guides in atmosphere; 3) interacting wave guides; space pulsations; 4) energy leakage through guide walls.

FDB 60T91

USSR/Physics Jun 1947
Nozzles, Laval
Flow

"A Series of Particular Solutions of the Darby-Trikomy Equation and Its Application to the Approximate Determination of the Critical Flow in a Predetermined Plane-Parallel Laval Nozzle," F. I. Frankl', 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Chiefly mathematical discussion concluding that after determining relationship of $\mathcal{S}$ 1 to η, we can, conversely, also find relationship of speed w1 (or the critical discharge) to maximum width of nozzle.

FDB 60T92

USSR/Physics Jun 1947
Gas Flow
Filtration

"Gas Filtration in a Reactive Porous Medium," A. B. Chernyshev, Corr Mem, Acad Sci; A. A. Pomerantsev, I. L. Farberov, Energetics Inst imeni Krzhizhanovskiy, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Mathematical discussion with graph and diagram, concluding that comparison of rate of progress of reaction front for various speeds of draft current, in a wide range (from 1 to 60 liters per minute), shows that transfer rate of reaction front N is proportional to gas flow discharge Q.

FDB 60T93

USSR/Physics Jun 1947
Ignition
Diffusion

"Role of Diffusion in the Auto-Ignition Process," N. S. Akulov, Act Mem, Acad Sci BSSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Mathematical discussion concluding with theorem that diffusion leads to reducing the effectiveness of value of mathematical expectation of regeneration of A_{pp} upon quantity $\lambda_0 D_p$; the coefficients of transmutation A_{pq} (with $p \neq q$ remaining invariable throughout).

FDB 60T94

USSR/Physics Jun 1947
Movement, Brownian
Mathematics, Applied

"Statistical Reversibility of the Brownian Movement," A. M. Yaglom, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Mathematical discussion concluding that conditions considered differ, only in form, from essential and adequate reversibility equations of Schrödinger and Kolmogorov, given in article. In this way, disregarding the inertias of the system, reversibility coincides with that adopted in theory of Eynshteyn and Smolukhovskiy.

FDB 60T95

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USSR/Physics Jun 1947
Adsorption
Charcoal - Activation

"Adsorption of Water Vapors and the Structure of Activated Charcoal," M. M. Dubinin, Academician; Ye. D. Zaverina, Chem Warfare Acad, Inst Phys Chem, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 7

Discusses experimental data, illustrated with graph, and explains them by shift of adsorption branches into field of higher relative pressures, with progressive activation of charcoal and reverse effect in formation of acid surface oxides.

FDB 60T96

USSR/Physics Jul 1947
Luminescent Materials
Phosphors

"Luminescence of Crystal Phosphors at Constant Excitation in the Region of the Fundamental Absorption Band," E. I. Adirovich, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Describes study of relation of luminescent intensity of crystal phosphors during excitation, to intensity of exciter, for case where emission belongs in fundamental absorption band. Submitted by Academician S. I. Vavilov, 15 Jan 1947.

FDB 60T97

USSR/Physics Jul 1947
Waves, Ultrasonic
Absorption

"Absorption of Supersonic Waves in Liquids," P. A. Bazhulin, M. A. Leontovich, Academician, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 1 p

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Discusses recent report by S. B. Gurevich which confirms that relaxation ideas on absorption and dispersion of supersonic waves, only confuse and complicate interpretation of experimental results.

FDB 60T98

USSR/Physics Jul 1947
Luminescent Materials
Phosphors

"Temperature Quenching of the Photo-Luminescence of Zinc Oxide," F. I. Vergunas, F. F. Gavrilov, Siberian Phys-Tech Inst, Tomsk State U, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Describes experiments designed to show suitability of Gurney and Mott's formula for describing the quenching of luminescence of crystal phosphors. Submitted by Academician S. I. Vavilov, 14 Jan 1947.

FDB 60T99

USSR/Physics Jul 1947
Heat Exchange Systems
Turbulence

"Intensification of Convective Heat Exchange for Artificial Turbulence of the Boundary Layer," Z. F. Chukhanov, Corr Mem, Acad Sci, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Describes experiments showing that general principles produced by author on intensification of heterogenic processes of heat exchange type are correct and can be checked by several methods.

FDB 60T100

USSR/Physics Jul 1947
Films
Pressure Equalization

"Momentless Spherical Film With Large Displacements," V. Marchenko, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 1

Gives details of research carried out on closed momentless film under action of internal pressure and compressed between two parallel surfaces. Submitted by Academician M. V. Keldysh, 10 Jan 1947.

FDB 60T101

USSR/Physics Jul 1947
Astronomy

"Destructive Action of Meteorite Blows," K. P. Stanyukovich, V. V. Fedynskiy, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Larger planets of the solar system are subjected to constant bombardment by meteorites that hit planets at terrific speeds and result in a slight destructive action. Presents formulas for calculating destructive action of meteorites hitting earth. Submitted by Academician N. N. Semenov, 14 May 1947.

FDB 60T102

USSR/Physics Jul 1947
Filters, Ultraviolet
Glass

"Influence of the Iron Content Upon the Conductivity of Ultraviolet Rays by Glass," P. V. Bukarinova, I. A. Pleteneva, Lab for Heat Processing of Glass, State Optical Inst, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Experiments were conducted on four types of glass utilized in manufacture of ultraviolet filters. Table lists composition of glass. It was determined that to attain similar degrees of light conductivity

FDB 60T103

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USSR/Physics Jul 1947
Refraction, Double
Mensuration

"A New Method of Measuring Double Refraction by Means of the Half-Shadow Method," N. A. Tolstoy, State Optical Inst, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Gives two basic methods for measuring double refraction: 1) extinguishing method, and 2) half-shadow method, briefly describing characteristics of second method. Submitted by Academician S. I. Vavilov, 23 Jan 1947.

FDB 60T104

USSR/Physics (Contd) Jul 1947

silicate glass could contain ten times more iron oxide than borate glass. Submitted by Academician I. V. Grebenshchikov, 17 Dec 1946

FDB 60T103

USSR/Physics Jul 1947
Phosphorescence
Phosphors

"Initial Stages of Phosphorescence of Crystal Phosphors," E. I. Adirovich, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Phosphorescence of crystal phosphors can be divided into two separate processes: 1) immediate recombination of free electrons with ions of the activator; and 2) recombination with electrons of ions of the activator. These two processes are completely different in

FDB 60T105

USSR/Physics (Contd) Jul 1947

their inception. Presents formulas for calculating phosphorescence in each of above given cases. Submitted by Academician S. I. Vavilov, 15 Jan 1947.

FDB 60T105

USSR/Physics Dec 1947
Atmosphere - Disturbances
Sound

"The Fluctuation in the Amplitudes of Sound During Diffusion in a Turbulent Atmosphere," V. A. Krasil'nikov, Inst Theoretical Geophysics, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Study of mentioned phenomenon from standpoint of static theory of turbulence. Studies conducted on basis of following assumptions: 1) nonhomogeneous field of speed of basic current is much larger than

FDB 60T106

USSR/Physics (Contd) Dec 1947

the length of a sound wave, in other words they studied geometry of acoustics; 2) field of speed of basic current is noncompressible; and 3) effect of temperature variation on change of sonic speed is disregarded. Submitted by Academician A. N. Kolmogorov, 26 Jun 1947.

FDB 60T106

USSR/Physics Dec 1947
Aerosols
Atmosphere - Measurements

"New Methods for Producing Aerosols," N. Smirnov, Lab Atmospheric Optics, Inst Geophys, Acad Sci, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Complexities and difficulties of old methods for the production of aerosols led author to develop this new method, which forms aerosols in a vapour medium. With new process it is possible to produce water aerosols with previously determined characteristics. Now possible to make tests in laboratories to determine aerosol state in the atmosphere. Submitted by Academician S. I. Vavilov, 24 Jun 1947.

FDB 60T107

USSR/Physics Dec 1947
Solar Radiation
Radiation, Corpuscular

"Corpuscular Radiation of the Sun," V. Krat, Pulkovskiy Observatory, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Reports study of the mechanism of corpuscular radiations connected with electrical pole of Sun and poles of radiation pressure. Submitted by Academician G. A. Shayn, 7 Feb 1947.

FDB 60T108

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USSR/Physics Dec 1947
Solar Radiation

"Long Wave Solar Radiation," N. N. Kalitin, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Some results of observations made at Actinometric Observatory, in Crimea (44-45 N, and 35-12 E) for a period of 5 years from 1936 to 1940. Describes methods used in carrying out these observations. Intention to study waves longer than 6500 Å. Submitted by Academician A. A. Grigor'yev, 27 Jun 1947.

FDB 60T109

USSR/Physics Dec 1947
Spectra, Absorption
Glass

"Laws Concerning the Change of the Absorption Spectra of Glasses Colored With Neodymium," V. P. Danilov, State Optical Inst, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Singularity of spectral properties in a given case is that, in distinction from other inorganic dyes, neodymium compounds in glass produce narrow strips of absorption. This property is especially valuable for theoretical study since, with narrow absorption strips, it becomes possible to observe
FDB 60T110

USSR/Physics Dec 1947
Waves, Electromagnetic
Dielectrics

"The Distribution of Electromagnetic Waves Along Infinite Dielectrical Cylinders at Low Frequencies," B. Z. Katsenelenbaum, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

With very broad assumptions, shows that two polarized waves, with different forms, can be distributed along an infinite dielectrical bar. In general their speeds are different. Submitted by Academician M. A. Leontovich, 26 Jun 1947.

FDB 60T111

USSR/Physics (Contd) Dec 1947

smallest changes resulting from changes in composition of medium surrounding ion of the dye. Continues research on use of neodymium as an "index" of structural changes in glass. Submitted by Academician I. I. Chernyayev, 26 Apr 1947.

FDB 60T110

USSR/Physics Dec 1947
Crystallography
Atomic Structure

"Calculation of Atomic Radii in Crystals," E. S. Sarkisov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Two types of relationships to determine character of atomic radius of subgroups A and B, based on their dependencies to general number of electrons in an atom. Mentions deficiencies of formulas submitted. Submitted by Academician I. I. Chernyayev, 20 Jun 1947.

FDB 60T112

USSR/Physics Dec 1947
Luminescent Materials
Spectrophotometry

"The Relationship of the Zinc and Copper Bands of Luminescence in Zinc Sulphide Luminophors," S. A. Fridman, A. A. Cherepnev, T. S. Dobrolyubskaya, Phys Inst imeni P. N. Pavlov, Acad Sci USSR, 3¼ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Spectrophotometric studies of temperature behavior and interrelationship of zinc and copper pole of luminescence in zinc sulphide luminophors during a high temperature state in surrounding media. Also
FDB 60T113

List of Abbreviations
used in FDB Periodical Abstracts

ID	Intelligence Division Library
AMC	Air Documents Division, Air Materiel Command
ST	Reference Division, State Department
BM	Bureau of Mines, Department of Interior
BS	National Bureau of Standards
SI	Smithsonian Institution
LC	Library of Congress
FDB	Foreign Documents Branch, CIA
COM	Department of Commerce
AF	A-2 Library, USAF

USSR/Physics (Contd) Dec 1947

spectral analysis of characteristics which occur at various temperatures. Submitted by Academician S. I. Vavilov, 16 Jul 1947.

FDB 60T113

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